REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-9 and 12-14 are pending in the present application, Claims 10 and 11 having been canceled without prejudice or disclaimer by way of the present amendment, and Claims 1-9 having been amended by way of the present amendment. Claims 12-14 have been added. No new matter was added.[1]

In the outstanding Office Action, Claims 1, 2, 9, 10, and 11 were rejected under 35 U.S.C. § 102(b) as being anticipated by Lee et al ("Recognition of Negative Emotions from the Speech Signal"); Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee et al in view of Gable et al (U.S. PAP 2005/0060153); Claims 4-8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al in view of Brandstein et al "Microphone Array Localization Error Estimation with Application to Sensor Placement"); Claim 11 was objected to due to an informality; Claim 10 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite; Claim 10 was rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter; and the disclosure was objected to.

Claim 1 defines that parameters for ***absolute loudness*** are determined. Such parameters are not determinable in Lee et al. As described in the specification (pages 3 and 5), absolute loudness is typically determined with more than one microphone, such as, for example, by a microphone array. Applicants' Fig. 2 shows, for example, a speaker (S) and a microphone array (MA). In this illustrative configuration and using for example the algorithms described in the above-cited parts of the specification and referred to in dependent

[1] The changes to the claims are supported by the subject matter of the original claims. Support for new Claims 13 and 14 is found in the specification.

Claim 6, Applicants can determine parameters describing absolute loudness, as defined in Claim 1.

Lee et al describes using "energy information" for emotion recognition (page 241, column 1, lines 57-61). However, the energy information in Lee et al is not an ***absolute*** energy, i.e. the energy information in Lee et al depends, for example, on the distance of the microphone from the speech signal source. For example, if the microphone in Lee et al is close to the speaker, then the energy would be high, whereas, if the microphone is far away, the energy would be low. Furthermore, Lee et al describes only one microphone, which does not permit Lee et al to use algorithms such as described by Applicants to determine absolute loudness. Regardless, the measured energy in Lee et al is dependent on a relative measurement and is not an absolute measurement of the energy of the speech measured. In order to compute absolute energy, Lee et al would have to calculate the energy in such a way as to make it independent of the distance of the speaker to the microphones. Furthermore, while energy, amplitude, and loudness may be correlated, the disclosure in Lee et al of energy information does not teach determining absolute energy, let alone absolute loudness. For Lee et al to have taught the claimed determination of parameters describing absolute loudness, further structure and/or algorithms would have had to have been disclosed by Lee et al.

M.P.E.P. § 2131 requires for anticipation that each and every feature of the claimed invention must be shown and requires for anticipation that the identical invention must be shown in as complete detail as is contained in the claim.

Accordingly, with regard to independent Claims 1, 9, and 12, Lee et al does not disclose absolute loudness (or techniques by which absolute loudness can be derived). Thus, it is respectfully submitted that independent Claims 1, 9, and 12 (and the claims dependent therefrom) patentably define over Lee et al.

With regard to Claim 3, Applicants submit that emotion recognition is quite different from speaker identification, and therefore, completely different systems are used for emotion recognition and speaker identification. Only by impermissible hindsight reconstruction would one of ordinary skill in the art know which parts of Gable et al to combine with Lee et al to provide the elements defined in Claim 3. Moreover, various adaptations to the system of Lee et al would be necessary in order to adapt the system of emotion recognition disclosed in Lee et al with the system for speaker identification of Gable et al, potentially rendering Lee et al unsatisfactory for its intended purpose. See M.P.E.P § 2143.01 (V). Further, Applicants believe that the use of absolute loudness in speaker identification is valuable because speakers tend to speak with different loudness. That is, to accurately identify a speaker, absolute loudness must be determined and applied. Thus, it is respectfully submitted that Claim 3 patently defines over Gable et al.

Regarding Claim 6, Brandstein et al does not teach how to determine the absolute loudness using algorithms for auditory and/or binaural processing, as defined in Claim 6. Page 21 of Brandstein et al describes modeling a source as a cardioid radiator. The source model, however, is only a model to generate noise in the experiments described in Brandstein et al in order to evaluate an error estimation associated with a speech source location estimate (page 2, last paragraph). The second source is thereby modeled by the talker location (page 19, second to last paragraph). Thus, Brandstein et al does not disclose determining the absolute loudness using algorithms for auditory and/or binaural processing, as defined in Claim 6. Hence, it is respectfully submitted that Claim 6 patently defines over Brandstein et al.

Regarding the rejection of Claim 8, and regarding new Claims 13 and 14, Brandstein et al clearly state that the time delay of the speech input between the plurality of microphones, i.e. the respective arrival time of the speech signal at two or more microphones

(Claims 13 and 14) is not used (see, in particular, Brandstein et al, page 3, line 1 to end of section 1). More particularly, Brandstein et al discloses that "no attempt is made to define time difference of arrival values relative to a single reference sensor." Thus, Brandstein et al does not disclose or suggest determining a time delay regarding the arrival time of the respective speech signal at a particular microphone sensor, as claimed by Applicants. Hence, it is respectfully submitted that Claim 8 and new Claims 13 and 14 patently define over Brandstein et al.

Regarding the informality identified in the Office Action, the disclosure has been amended to include appropriate headings. Thus, the objection to the disclosure has been overcome.

Claim 10 has been canceled without prejudice of disclaimer, and has been rewritten as new Claim 12, to overcome the U.S.C. § 112, second paragraph rejection as well as the U.S.C. § 101 rejection. For example, Claim 12 recites a computer readable medium encoded with a computer program, which M.P.E.P. § 2106.01 (I) indicates as being statutory subject matter

Consequently, in view of the present amendment and in light of the above discussions, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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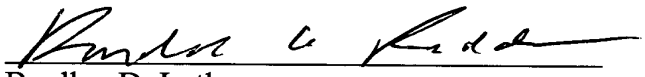

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